A PLAN FOR THE INTEGRATION OF CURRENT KNOWLEDGE INTO EXISTING CLOTHING AND TEXTILE COURSES AT THE COLLEGE LEVEL

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

CHAPTER I

INTRODUCTION

Home economics, as it is known today, appears to have emerged from roots established during the early twentieth century. However, prior to that time, particularly during the latter part of the nineteenth century, courses in domestic economy were offered in some state colleges. Also cooking schools were popular in the north eastern section of the nation. At the same time many finishing schools offered instruction in handicrafts and needlework. Some elementary schools also offered needlework and handicraft courses at early grade levels (2).

When home economics was labeled an area of study, these early attempts at needlework and sewing became forerunners of the clothing and textile offerings which are recognized today. As an area of study, home economics, including clothing and textiles, has existed for approximately half a century. Over the years economic, scientific and cultural developments have led to many innovations in the curricula particularly in textile content. For example, after World War I the introduction of rayon fabrics started the trend toward fiber synthesis. After World War II numberous chemically synthesized fibers and chemical finishes appeared in textile fabrics. During the past twenty-five years continuous developments in textile science have had a striking impact upon the teaching of clothing and textiles in home economics.

Teachers of clothing and textiles have been faced with the need to

re-examine content of courses which they taught and the methods used. Questions such as the following are discussed among the conscientious and scholarly professionals.

(1) What is important basic content?

(2) How can one incorporate new knowledge without sacrificing some of the basic and traditional content?

(3) Will students be able to comprehend and be willing to accept much of the new subject matter?

(4) In basic courses, should striking changes be made in the amount of subject matter included and the amount of time devoted to interpretation of it through laboratory experiences in fabric manipulation, namely construction of a garment?

The foregoing questions, and others similar to them indicate that the professional responsibility of teaching clothing and textiles in the contemporary scene is intellectually demanding. Revitalizing the traditional services of clothing and textiles instruction and integrating new knowledge appears to be the order of the day. But admittedly, at any time, the reasons for revitalizing and integrating instruction are: to inspire students to think, to apply course outcomes to meet their immediate and long range goals, and to achieve intellectual growth.

Respect for the traditional solidarity of clothing and textile offerings and the concern about uncertainties regarding contemporary directions motivated the present study of course offerings in clothing and textiles, and the opportunities which exist for including new knowledge into present course offerings.

Purposes

The purposes of the study were:

(1) To survey existing course offerings in clothing and textiles in colleges in Oklahoma and surrounding states.

(2) To propose new knowledge to be injected into existing course offerings of clothing and textiles at the lower division level.

Assumptions

It was assumed that:

(1) Clothing and textile course titles and descriptions would indicate the subject matter content. i.e. (Course title and description would indicate what the course dealt with).

(2) Course titles and descriptions would reveal whether the course content was traditional or more recent and might indicate possibilities for revitalizing traditional knowledge and integrating current knowledge.

(3) Opportunities would be discovered for structuring some proposals of content for clothing and textile course offerings at the lower division college level.

CHAPTER II

REVIEW OF THE LITERATURE

Many philosophies of education have prevailed since the establishment of American colleges. Despite the philosophy which is current in any era, the aim of higher education has always appeared to be that of preparing the individual to live in harmony with society, to understand himself and his environment and to improve mankind. When man is improved, society is improved.

A new era dawned with the passing of the agricultural age and the introduction of the machine age. This new era held great significance for education. Emphasis was shifted from that of earning a living to living. Because of the technological advances the need for more technical knowledge and skills to meet the demands of the era became apparent. The same technological advances also created more leisure for people than they had experiences in the past.

John Dewey had probably the greatest influence on education at the turn of the twentieth century. According to an address delivered before the Hazen Conference on Student Guidance and Counseling (22), "John Dewey proposed education as a process of life and growth which took place in a social atmosphere and was a continuing process from birth to death." If education is a continuing process throughout life, colleges may help the individual continue the growth process through the offerings of continuing education. Hutchins (9) stated, "Learning

does not stop as long as man lives, unless his learning power atrophies because he does not use it." Is it not conceivable that one principle which might be applied in higher education would be that those things should be taught in college which would go with the graduate all through his life making it fuller for him than it would otherwise have been?

Education deals with the development of powers of intellect in man. Hutchins (10) stated, "The aim of higher education is wisdom. Wisdom is knowledge of principles and causes." The pursuit of knowledge therefore involves the individual in thinking. Thinking then is the process for obtaining wisdom and truth. Hudson (8) said, "We think by facts as well as about them." Facts are useful only if they are not isolated, but have relevance to other facts and will be useful to the individual throughout his life. However, factual changes become necessary from time to time in order to keep up to date. The rapidity with which factual information becomes obsolescent necessitates continuing education. Facts and/or principles which are learned should be useful when applied to fields other than that in which they originate. To apply facts learned in one field to another field involves the individual in thinking to arrive at a suitable application for the situation. According to Hutchins (9), "What belongs in education is what helps the student to learn to think for himself, to form an independent judgment and to take part as a responsible citizen." Not only should a student be taught to think, but he should be guided and directed in his thinking toward certain ends by the professor or instructor. An address delivered before the Hazen Conference on Student Guidance and Counseling (22) emphasized that, "Teaching students to think is not

enough. We must guide them toward a goal which tested thought approves."

Course offerings should provide a lifelong basis for reasoning. Hudson (8) maintained, "We want knowledge that a person can live with and live by --- a content such as can be cherished and turned to, not as one flees to a place of refuge but as one goes to a storehouse or makes connections with a powerhouse." Course offerings today bear small resemblance to the number and limited fields of endeavor which existed when college curricula were initially offered. Technological advances have caused educators to re-examine curricula and revise them to meet the many and diverse demands of the times.

American culture has many facets. Education should be broad enough to cover the basic American culture. Barzun (1) suggested, "What makes a subject fit for higher education is surely no novelty: it is that it should enlighten all the corners of the mind and teach its own uses." At the same time that education should cover the basic American culture it should also be an individual matter. Barzun (1) further said of education, "It is a lifelong discipline of the individual by himself, encouraged by a reasonable opportunity to lead a good life." Each student could probably progress best if he were given guidance so that his program would cover the needed material, which would be in keeping with his ability. Jersild (11) said, "To be interested in what is taught it is important that the student find something of meaning and value for him in being taught."

The responsibilities of educators at the university level have been and are now being compounded by rapid technological advances. Mayer (13) said, "Universities today are in a state of ferment and thus

fertile soil exists for self examination and reform." Many changes in curricula have been necessary for education to keep up with the changing times. Rosecranz (16) maintained, "With the explosion of knowledge, college professors and administrators are of necessity engaging in revision of curriculum." It is apparent that curricula must be revised if education is to progress. The revisions need to be made in every field of endeavor, as no area of concentration is separate and apart from another. McConnell (14) believed,

> If colleges and universities are to meet future needs, they will have to encourage fruitful innovation. In appraising old purposes and setting new goals, and in discovering better means of attaining educational objectives, room for imagination and innovation is abundant, and opportunity for improving the educational process all along the line is plentiful.

Harvard, the first college in the United States, was founded in 1636 (4). For almost sixty years it was the only institution of higher education in the United States. The trend toward establishment of institutions of higher education began in the nineteenth century. The aims of a college or university are still the same as they were in the beginning. What are the aims of a college? Rosecranz (16) said, "In general these may be said today to be three. A college exists to serve society, to perpetuate itself, and to serve the individual." If we are to achieve the aims of the college we must meet the challenges which face education today. According to McConnell (14), "Unless education challenges the brilliant while serving the ordinary, it will ultimately condemn us to a mean state." Preparing the youth of today to meet the demands of tomorrow can be a rewarding endeavor, for the college student today is more mature than his father was when he enjoyed the benefits of higher education. McConnell (14) further stated, "Education broadly conceived should change attitudes and values toward

greater maturity." Hopefully it achieves that end.

Home Economics, as an area of study, is a relative newcomer to the field of education. Within the confines of the broad area of home economics are separate and distinct subject areas which are related to the whole of the classification home economics. One such area is clothing and textiles.

Clothing greatly affects the everyday life of individuals in many ways. Clothing and textiles reflect and can help interpret the social, economic, and political conditions of a country. Clothing has always been a means of protection and adornment. It can affect and does affect people psychologically, physiologically, and sociologically. According to a study by a home economics work conference (12),

> Study in textiles and clothing can contribute to an understanding of self, a realization of the speed of change affecting our lives, and an ability to make some of the adjustments demanded in a dynamic society. It can help an individual see the interrelation between ones practices and the cultural environment and provide a medium through which one can understand some of the important economic, social and political forces operating in a nation and between nations.

Throughout the history of nations there is evidence of the importance placed upon appearance which was achieved through dress and other adornments. Dress and personal appearance have long been associated with social and economic life. Morton (15) stated, "The persistance of this interest in adornment at different stages of culture has brought anthropologists and students of race chracteristics today to recognize it as a biological impulse instinctive in us all." Good appearance is considered important to success in business. It also paves the way to harmonious social relations. One way people express their personalities is through clothing. By a persons manner of dress, one makes a statement about oneself to society. According to Holtzclaw (7),

> The clothes people wear give information to those who wish to understand them. The costume of a group indicates many facets about the country itself --- the geographical and climate conditions, the government, and the general standard of living of the population. Clothes tell us what is important to people.

The use of clothing as a guide to the status of an unknown person is of utmost importance. People form opinions of an individual from the clothing that person wears. Dearborn (3) said, "One's social movements among his fellows, i.e., one's habits in his life as far as social communications are concerned, are more determined by clothing than many have ever stopped to think or realize." Sybers and Roach (20) stated, "Home economics and sociology had their beginnings during the same period of time and both were rooted in social reform. The turn of the century was a time for the founding of disciplines concerned with people." Exploration of areas of possible research in textiles and clothing related to the social sciences was first made at a conference of home economists, sociologists, psychologists and economists held in 1947 at Teachers College, Columbia University.

It is known that clothing may determine the friends one makes or influence one in choosing places to go. Some people believe that the ways we clothe ourselves is one of the surest indications of substantial intelligence.

Many physicians believe people need to be well dressed, and they sometimes advise women who are ill mentally to go out and have a real "splurge" in buying hats and dresses. Further evidences of this belief held by many physicians are the programs which have been instituted in mental hospitals involving fashion therapy. Along the same line, it is believed that more can be done with a delinquent girl by giving her a new dress than by preaching sermons to her (19).

Home economics is an integrating discipline in higher education. This idea was first introduced at the Lake Placid Conferences. According to Whitehead (21),

> Today just as yesterday it (home economics) requires dedicated, highly trained, imaginative and creative faculty for implementation through course offerings, research articulation, and genuine humility as an essential element in scholarship.

Heagny, Lyle, and Wilbur (5) reported in 1966, "In the last several years there has been increasing national pressure toward greater innovative thinking in textiles and clothing."

Ideas become deeply ingrained and difficult to change. It appears to be human nature for people to work at improving those things with which they are familiar instead of experimenting with something new or unfamiliar. Heagny, Lyle and Wilbur (5) further stated ----

> So the challenge today is to find a way where subject-matter, content and methodology can be married to provide learning experiences for the student that are based on concepts whereby he may meet the challenges of an ever-changing teaching situation.

Making clothes may be a form of artistic expression. Clothing creates an image before the voice reaches, so the possibilities for communication are innumerable. Holtzclaw (7) said, "Textiles and clothing tell a fascinating story of mans development from the savage through civilization. It is the history of mans innate desire to satisfy his love of adornment."

CHAPTER III

PROCEDURE

A survey was made of the home economics offerings listed in the college catalogs available in the Oklahoma State University Library for the states of Arkansas, Kansas, Missouri, New Mexico, and Oklahoma. Only junior colleges and four year colleges which offer similar types of courses were included in the survey eliminating the larger universities in the hope of gaining a more homogenous sample. Since there were not catalogs from a common number of institutions in each state, one college or university is not to be considered more important than another. There was no attempt made, nor any intention to make comparisons of colleges.

The information gathered was tabulated according to states. (See Appendix Table No. I). Clothing and textile course offerings from each college and university catalog were listed under six headings. The six areas were:

(1) Clothing Construction

(2) Clothing Selection and Design

(3) Flat Pattern

(4) Historic Costume

(5) Sociological and Psychological Aspects of Clothing

(6) Textiles

About the same number of catalogs were available from Arkansas,

Missouri, and New Mexico; however considerably more were available from Kansas and Oklahoma.

Not all of the colleges and universities surveyed in each state were included in the study. A larger number of colleges was included from those states in which a larger number of catalogs was available, but all of the colleges included in the survey were a comparable type of educational institution. The number of colleges included in the summary were Arkansas 6, Kansas 10, Missouri 6, New Mexico 5, and Oklahoma 10. (See Appendix Table No. I)

Information of course offerings in the colleges and universities was combined by states to indicate the extent of course offerings in each state. (See Appendix Table No. II)

A brief check list was formulated of books likely to be used either as texts or references in the area of clothing construction and textiles. The check list was sent to the department of Clothing and Textiles in each of the institutions. The responses to the check list are reported in Appendix Table No. III. It was hoped that areas for presenting subject matter in clothing and textiles would be discovered from the table of contents in the books.

CHAPTER IV

PROPOSALS

Investigations of the effects of clothing upon the wearer and upon the observer reveal that clothes have relevance to the individuals feelings of self confidence, his values, and the various roles he assumes in his life. Since clothing is so closely interwoven with the individual in all aspects of his life, it could be advantageous to have a greater depth of knowledge concerning textiles and clothing, particularly in clothing construction. A different concept applied to the area of textiles and clothing could bring about a greater awareness of the potential of a fabric as it is used to construct a garment.

PROPOSAL I: To introduce a different concept of fabric and its manipulation in the clothing and textile area in the lower division college level.

A further dimension could be emphasized in textiles and clothing at the lower division college level by studying fabrics in relation to the construction of a garment. Course work which includes fabric geometry could increase the knowledge about fiber, yarns and fabric as they affect the appearance and fit of a completed garment.

Fabric geometry is another dimension of textile fibers, yarns and fabric, so logically appears to be content matter which could be included in textile courses. However, the writer believes that for the stu-

dent to gain maximum understanding of the concept of fabric geometry, it should be taught in conjunction with garment construction. In this manner the student could employ the principles involved and see the results of the application in the garment being constructed.

The individual would work with a length of fabric manipulating it into a garment which would not only be aesthetically appealing, but would accommodate the demands placed upon it by the anatomical structure (e.g. The outward curves of the body such as the hip, the breast, and the derriere; plus the inward curves such as the waistline). Fabric geometry could probably best serve the individual if used as principles which would form a basis for predicting what might happen or as an explanation of what has happened concerning the fit, comfort and appearance of a garment.

Application of principles involved in manipulation of fabric in construction of a garment necessitates an understanding of certain terms relating to fabric geometry. (See glossary of terms, Appendix B)

An analysis of the table of contents of textile books showed that one area of content matter is fabric construction. This appeared to be the area of content which was best suited for the inclusion of information concerning fabric geometry.

Application of the principles of fabric geometry is directed only toward the woven fabric and is not intended to include the nonwoven fabrics, heat set, or thermoplastic fabrics or those with chemical finishes. New developments in textiles have resulted in many changes in fabric behavior. Differences in behavior, from that previously experienced with fabrics, may be the result of chemically synthesized fibers, finishes, or a combination of these and other factors.

One approach in dealing with fabrics and problems encountered in

the construction of a garment might be through the concept of fabric geometry. Fabric geometry is concerned with the relation, properties and measurements of solids, lines and angles much as geometry is in the field of mathematics. However, fabric is a creation of man from natural or synthetic fibers. In the woven fabric, when yarns work against each other the amount of shearing which may take place is limited.

There is a constancy of behavior in a woven fabric. It will lie flat. Fabrics respond to stress in both the warp and filling directions. In most fabrics, the warp responds with greater resistance or has less extensibility than the filling. However, extensibility is most often thought of as being highest in the bias direction. The difference in the behavior of warp and filling yarns is known as the fabrics anisotropic property, which may be measured in degrees. This property gives a fabric shearing potential. When shearing potential is properly controlled or managed a contoured garment can result. The anisotropic measurement is in both the warp and filling directions---not the bias. Buckles result where the cloth is pulled in a bias direction.

Shearing potential is easily observed in the woven fabric. Shearing is always a potential of a fabric, which may vary from a low potential to a high potential. High shearing potential allows better contouring of a fabric to the body than does low shearing potential.

There are three possible ways to treat fabric which facilitate achievement of fit, comfort and appearance of clothing, namely:

1. Shorten the yarns by
   a. Cutting
   b. Overlapping (darts, pleats, folds, or tucks)
2. Compress the yarns (ease, crowd, or gather)
3. Stress the yarns.

The purpose of the above fabric manipulations is to increase the phenomena of shearing beyond that which the fabric has potential for so that compatability of fabric with anatomical structure may be achieved through the formability of the fabric.

A selvage might be called the saving grace of a fabric in that it keeps the yarns from becoming disaligned in the woven cloth. When constructing a garment, movement of yarns and their potential for movement determine if a selvage needs to be cut off or not. Assuming this to be true, it appears that the selvage should be removed from loosely woven fabrics to allow for maximum movement of the yarns.

Crimp is a characteristic of yarn acquired in the weaving process. The amount of crimp which a yarn in a fabric will have is due to the size of the yarns and the closeness of the yarns in the woven fabric. Loosely woven fabrics having the same size yarns as a closely woven fabric will have less crimp. Crimp may affect clothing in the wearing process. The amount of crimp may be the cause of a garment shrinking or becoming larger during its life. When a garment becomes slightly larger due to wear, washing usually causes it to return temporarily to its original shape. Crimp together with the number of warp and filling yarns per inch and thus the interlacings make for the mystery of where the true bias occurs.

Evidences of shearing and buckling appear in the fabric together. Behavioral signs of shearing taking place in the woven fabric are yarn disalignments of yarn direction such as shifting, rotating and slipping out of the engineered right angle configuration. Shearing is never induced on a raw edge. The extent of shearing is dependent upon the amount of the fabric through which the effects of shearing

can be dissipated. Control of buckles and positioning of them, and the whole of the buckling phenomena is the basis for interpreting fabric behavior in garment design. Fit of clothes results when the principles of fabric geometry covering buckles and the dissipation of them are employed.

The concept of fabric geometry may help one to better understand problems encountered in fabric manipulation and therefore garment construction.

PROPOSAL II: To introduce methods of interpreting fabric behavior in clothing design at the lower division college level.

Problems encountered in clothing construction cannot be separated from the fabric. Woven fabrics have some characteristics which are consistent among them and are therefore useful in the manipulation of fabrics in conjunction with garment construction. These characteristics are:

(1) Fabrics will always hang down

(2) The downward hang is in the warp direction

(3) The fabric will always have a cross-wise extension potential

(4) The two sets of yarns with which a fabric is woven give the fabric its extensibility

(5) All woven fabrics have a true bias which is the maximum position of extension

(6) A fabric has many bias regions which aren't true bias

A stress-strain system is developed in a fabric even when it is picked up. Inducing fabric to behave is conditioned by what the fabric must cover. The geometry of fabric and the contour of the human

body are incompatible. Each is a separate, tangible item of material. The fabric has two dimensions, while the body is three dimensional; therefore a garment design is a distortion of the two dimensional fabric to fit a three dimensional figure. True design is achieved through compatibility of decorative design with structural design.

There are structural features and contour areas of the body which must be considered when endeavoring to achieve compatibility of design with the anatomical structure. The structural features and contour area which provide major support for a garment are listed below.

STRUCTURAL FEATURES	CONTOUR AREAS
1. Central Axis (spine)	1. Chest
2. Base of neck	2. Shoulders
3. Shoulder terminals	3. Breast
4. Waist	4. Waist
5. Hips	5. Waist to hip bone

Some areas of the body present more perplexing problems in fabric behavior on the anatomical structure than do others. The waistline appears to be the most perplexing area. Next to the waistline, the area at the base of the neck presents many difficulties in garment construction.

In garment construction line direction as it is used in the concept of fabric geometry refers to the position of warp and filling yarns in true alignment or disalignment. When reference is made to yarn direction, it is related to the central axis (spine) of the figure.

The basic problem in garment design is to bring the fabric into a compatible relationship with the structural features of the body it

is to cover. Because there is body movement, garments should allow freedom for movement and comfort when being worn.

For the purposes of this study, the writer has limited the explanation of garment design and fabric geometry to darts in the back bodice. One subject was analyzed, then procedures for resolving the problem were followed in the order listed below.

1. Purpose: To analyze the structural contour of the region of the back from the base of the neck to the point of indentation (the waist line) and develop a bodice back design for the area.

2. Examine the contours of the body and identify the locations of areas which would cause yarn disalignments of a woven configuration (the fabric) when placed upon the body in the form of a garment. (Location of the sources of stress is accomplished by measuring in inches downward from the base of the neck, and outward from the central axis, the spine).

3. Analyze the areas of stress and the yarn changes which would be necessary to compensate for the stress and simulate the conditions by placing wadded tissue under the fabric in the area of stress as the fabric is lying on a flat surface.

4. Determine what yarn changes are to be made, e.g. shortening, stressing, compressing, or changes of yarn direction.

5. Make the changes so that original yarn configuration or yarn direction is achieved.

The accompanying diagrams reveal the analysis of the subject and the yarn changes made by the modified cutting lines, and new dart placement in a bodice back. The purpose of the modified cutting line was to create longer areas of extensibility to accommodate the areas of stress which demanded a larger expanse of material. The type of bodice back used in the problem was one with a center back opening to the waist line.

Analysis of the back area of the subject revealed that the lower shoulder blade and strong shoulder terminals placed stress on the fabric. Diagram A shows the areas of greatest stress on the fabric.

DIAGRAM A.

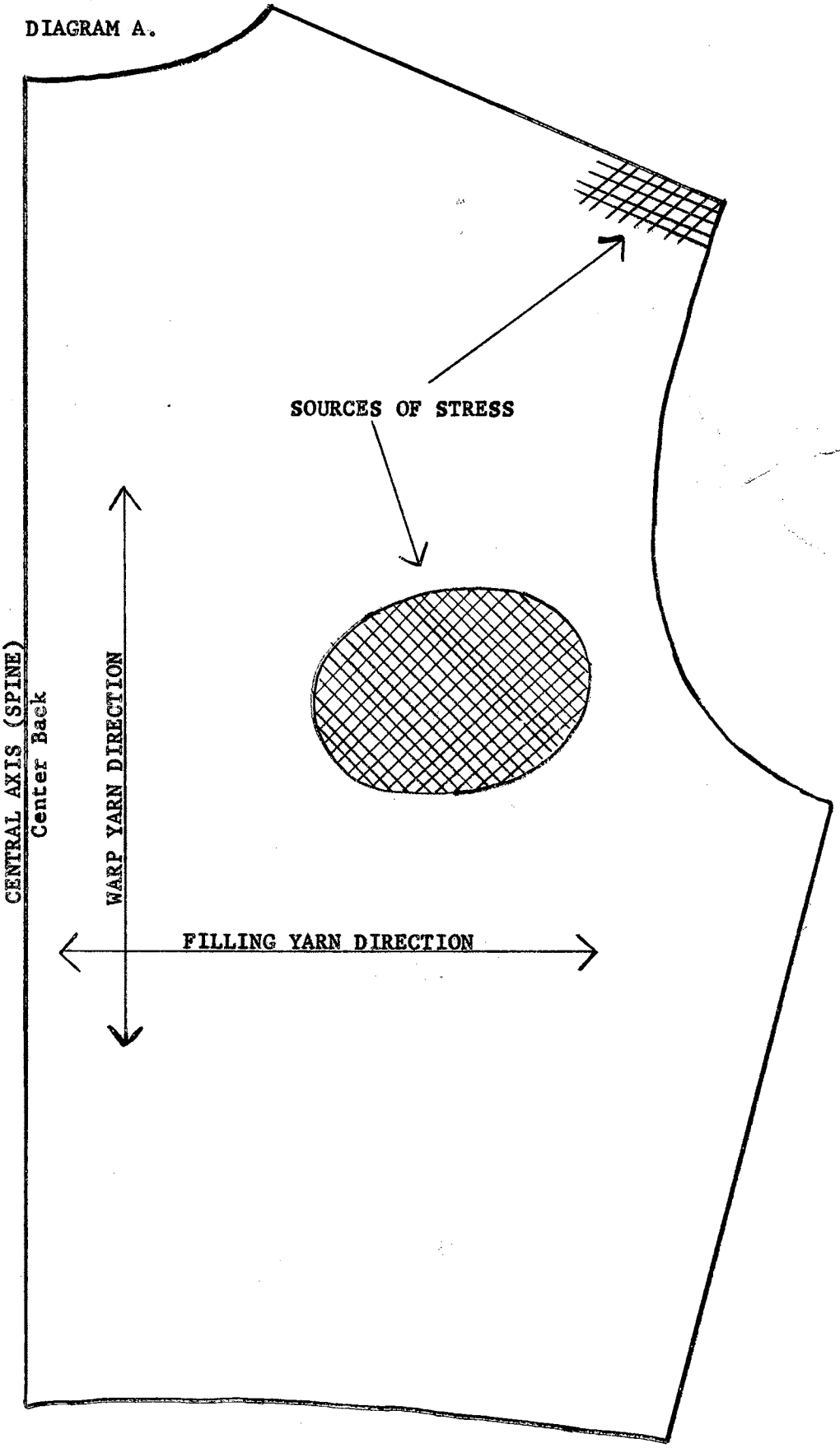
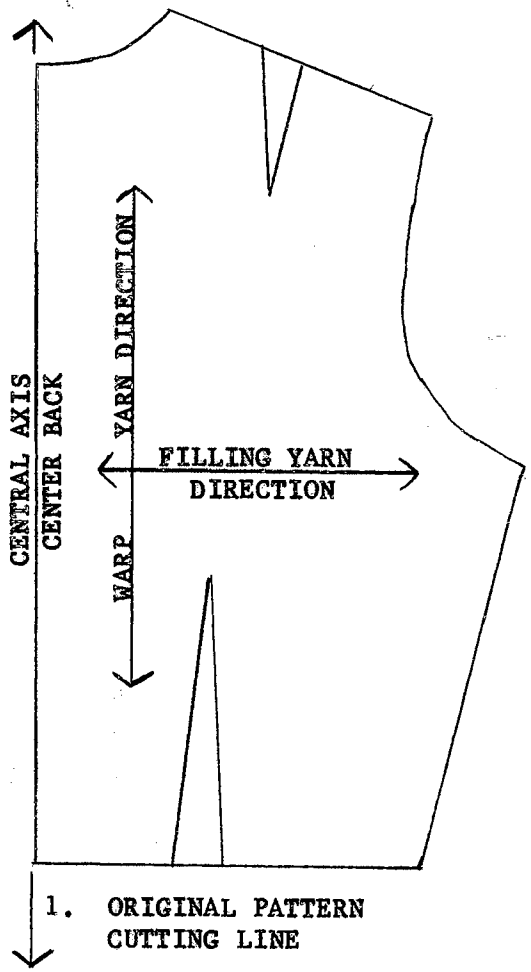

SOURCES OF STRESS
CENTRAL AXIS (SPINE)
Center Back
WARP YARN DIRECTION
FILLING YARN DIRECTION

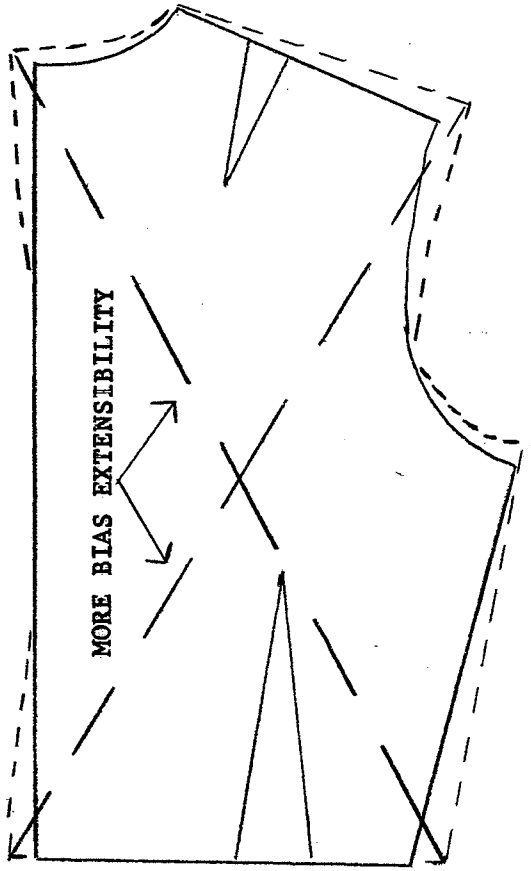
Diagram B_1 is representative of a bodice back design as it was originally cut from a fabric. Diagram B_2 reveals the changes in cutting line and placement of darts which were necessary to compensate for the stresses which were placed upon the fabric by the subject's anatomical structure.

Garments which are designed to accommodate the structural contours of the body and its movements in various situations are more satisfactory in comfort, fit and appearance than garments which are made to conform to the paper pattern.

DIAGRAM B.



1. ORIGINAL PATTERN
CUTTING LINE



2. MODIFIED CUTTING LINE
AND DART PLACEMENT

CHAPTER V

SUMMARY

The purposes of the study were to determine subject matter content which was offered in clothing and textile courses in colleges in Oklahoma and the surrounding states of Arkansas, Kansas, Missouri, and New Mexico as indicated by the college catalogs, and to propose new knowledge to be injected into existing course offerings of clothing and textiles at the lower division level.

A survey of college catalogs in the Oklahoma State University library for the states of Arkansas, Kansas, Missouri, New Mexico, and Oklahoma was made to discover the offerings of Colleges of Home Economics in clothing and textiles. The survey of clothing and textile courses revealed that apparently traditional courses were offered in greatest number in colleges and universities. However, some course offerings indicated that newer content material is being injected into college curricula; for example, the social, psychological aspects of clothing.

Clothing and textiles course titles and descriptions revealed subject matter content; some indicated an overlapping of subject matter content in two or three course areas. Clothing construction outnumbered any other course offering in the area of clothing and textiles. Most of the colleges offered one or more courses in textiles.

A study of the course offerings concerned with clothing and

textiles led the writer to conclude that two areas, namely clothing construction and textiles were the areas which were best suited to the inclusion of current knowledge. Upon this assumption proposals for the inclusion of knowledge were structured for use in these course offerings.

The survey of literature disclosed the duality of clothing in the lives of people. Not only does clothing serve as a protection, but it also has implications psychologically and sociologically. Clothes, so doctors are discovering, have a therapeutic value too. Because the comfort, fit and appearance of clothing is important in all aspects of the individuals life, the proposals for inclusion of new knowledge into the areas of clothing and textiles were structured to introduce the concept of fabric geometry, a concept which deals with lines, spaces, and angles in the fabric. The vocabulary necessary to understand the concepts appeared to be compatible with textile courses if used in conjunction with garment construction. The second proposal was concerned with construction of a garment which was designed to fit an individual figure and not to conform to the paper pattern. This logically belongs in the area of clothing construction.

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APPENDIX A

TABLE I

COURSE OFFERINGS IN COLLEGE CATALOGS BY STATE AND SUBJECT CONTENT

ARKANSAS

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
So. State at Magnolia, Arkansas	2	2	0	0	0	1
	*(2)- - - - - - -(2)					
John Brown University at Silaom Springs	3	0	0	0	0	1
	*(1)- - - - - - - - - - - - - - - - - - -(1)					
Ag., Mech., and Normal at Pine Bluff	2	0	0	0	0	1
Henderson State Teachers at Arkadelphia	4	0	0	0	0	1
Philander Smith at Little Rock	3	1	0	0	0	1
Quachita Baptist U. at Arkadelphia	3	0	0	0	0	1

* Indicates that both types of subject matter were incorporated into one course offering.

TABLE I (Continued)

KANSAS

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
Kansas Wesleyan at Salina	3 *(1)	3 (1)	0	0	0	1
Kansas State Teachers at Pittsburgh	2 *(1)	3 (1) *(1) *(1)	1 (1)	0	1 (1)	1
Marymount College at Salina	3 *(1)	1 (1)	1 (1)	0	0	1
McPherson College at McPherson	3 *(1)	3 (1)	0	0	0	1
Bethel Coll. at Newton	2	2	0	0	0	1
Coffeyville Community Jr. College at Coffeyville	1	0	0	0	0	1
Emporia College at Emporia	3 *(1)	2 (1) *(1)	0	0 (1)	0	1
Ft. Hays State College at Ft. Hays	3 (1)	3 (1)	0	0	0	1
Pratt Community Jr. College at Pratt	2 *(1)	1 (1)	0	0	0	0

TABLE I (Continued)

KANSAS

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
Sacred Heart College at Wichita	3	1	0	1	0	1

MISSOURI

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
So. Eastern State at Cape Giradeau	3 *(1)- - - - - -	1 (1)	1	0	0	2
Central State at Warrensburg	3	2	0	0	0	5
Linwood College at St. Charles	3	1	0	0	0	2
Metropolitan Junior at Kansas City	1	1	0	0	0	0
Stephens College at Columbia	5	1	1	1	0	0
Southwestern State at Springfield	3	2 *(1)- - -	0 -(1)- - - -	0 (1)	1	2

TABLE I (Continued)

NEW MEXICO

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
Eastern New Mexico U. at Portales	4	4	0	0	0	1
	*(1)- - - - - -	(1)				
Western New Mexico U. at Silver City	3	1	0	0	0	1
New Mexico Highlands U. at Las Vegas	3	1	0	0	0	1
		*(1)- - - - - - - - -		(1)		
University of New Mexico at Albuquerque	2	2	0	0	0	2
	*(1)- - - - - -	(1)				
New Mexico State U. at University Park	3	1	1	0	0	1

TABLE I (Continued)

OKLAHOMA

College	Clothing Construction	Selection and Design	Flat Pattern	Historic Costume	Soc. and Psych. Aspects	Textiles
Northeastern College at Tallequah	4	1	0	1	0	1
Eastern Okla. A & M at Wilburton	3 *(1)	0 (1)	0 (1)	0	0	0
Okla. College of Liberal Arts at Chickasha	3 *(1)	1 (1)	0	1	0	0
Langston University at Langston	4 *(1)	3	0	0	0	0 (1)
Northwestern St. at Alva	4	1	0	0	0	1
Southwestern State at Weatherford	3	1	0	0	0	1
Southeastern State at Durant	5 *(1)	2 (1)	0	1	0	1
Central State College at Edmond	4	2	1	2 *(1)	1 (1)	2
East Central St. Coll. at Ada	4	1	0	0	0	1
Panhandle A & A College at Goodwell	2	1	0	1	0	1

TABLE II

SUMMARY OF COURSE OFFERINGS

State	No. of Colleges	Construction	Selection & Design	Flat Pattern	Historic Costume	Soc. & Psych. Aspects	Textiles
ARKANSAS	6	17	3	0	0	0	6
KANSAS	10	25	19	2	1	1	9
MISSOURI	6	18	8	2	1	1	11
NEW MEXICO	5	15	9	1	0	0	6
OKLAHOMA	10	36	13	1	6	1	8
Five State Total	37	111	52	6	8	3	40

TABLE III

TEXT BOOKS USED IN COLLEGES

BOOK	AUTHOR	YES	NO	AS A TEXT	AS A REFERENCE
TEXTILES					
Textile Fibers and Their Uses	Katherine P. Hess	10	0	1	9
Introductory Textile Science	Majory Joseph	9	2	1	8
Textiles: Origins to Usage	Jules Labarthe	9	2	0	9
Introduction to Textiles	Evelyn E. Stout	11	0	1	10
Textile Fabrics	Wingate	9	2	3	6
Textiles	Norman Hollen and Jane Saddler	10	1	4	6
CLOTHING CONSTRUCTION					
Clothing Construction	Evelyn A. Mansfield	11	0	2	9
Tailoring	Allyne Bane	8	3	2	6
The Theory of Fashion Design	Eileen L. Brockman	8	3	2	6
Flat Pattern Methods	Norma R. Hollen	9	2	7	2
Creative Clothing Construction	Allyne Bane	8	3	2	6
Clothing for Moderns	Mabel D. Erwin and Lila A. Kinchen	12	0	7	5

APPENDIX B

GLOSSARY OF TERMS*

1. Fabric geometry - The study of lines, directions of them, spaces, angles and the shifts in these which occur during manipulation when a garment is created and when it is worn.

2. Shearing - The sum total of a fabrics potential for movement; anisotropic, bias, etc. The potential of fabrics to respond to the application of forces.

3. Stress - The load or force applied by means of hand manipulations which strain the yarns in the flat configuration of a fabric.

4. Warp - Those yarns in a fabric which constitute the direction of the total length of fabric and which have been held under tension during the weaving process.

5. Filling - Yarns which interlace with selected warp yarns in a continuous and repetative pattern for the total length of the fabric.

6. Extensibility - The elongation and relaxation of yarns due to the occurrence of shearing when forces are applied.

7. Anisotropic property - A fabrics shearing potential which when properly controlled or managed can result in a contoured garment.

8. Shearing potential - How far the yarns in a fabric move before getting out of alignment.

9. Contoured - An area of fabric in which shearing and yarn shortening have occurred; and when the contouring has been done to achieve compatibility of fabric with a structural design the fabric conforms to the surface beneath it.

10. Bias - A phenomena due to the function of yarn, the size of yarn, the twist of the yarn, and the crimp of the yarn in both warp and filling directions.

11. Buckles - Raised areas in an otherwise flat plane indicating that stressing of the fabric has exceeded the shearing potential and/or extensibility of it.

12. Compress - Cause the parallel yarns in a fabric to move closer together.

13. Darts - Tapered folds used to control buckles.

14. Compatibility - A phenomena which occurs when the fabric conforms to the surface beneath it.

15. Formability - The property of a fabric which determines the degree to which the fabric can be manipulated to achieve compatibility with the anatomical structure.

16. Disaligned - Pulled out of shape, shewed or distorted.

17. Crimp - A characteristic of a yarn acquired through weaving which changes the configuration of the yarn. In the weaving process filling yarns will usually develop more crimp than the warp yarns.

18. Yarn Disalignments - Warp and filling yarns have true line direction in a woven fabric; yarn disalignments occur in one of the two directions.

19. Fit - Identifying the location for buckles and positioning them in a sectional part of a garment in such a way that they will be dissipated over the body and yarn alignment in the fabric will be restored.

* The glossary of terms with some modifications was taken from unpublished papers of graduate students at Oklahoma State University, who developed the glossary of terms during the course of graduate study.

VITA

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Master of Science

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